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Education:

Queens College, CUNY, New York	B.A.	1975	Physical Education
Ball State University, Muncie, IN	M.A.	1976	Exercise Physiology
The University of Arizona	Ph.D.	1979	Animal Physiology
Washington University Medical School	NIH post-doc	1979-1982	Applied Physiology

Professional Experience:

- 1979-1982: Postdoctoral Research Fellow, Division of Applied Physiology, Department of Preventive Medicine, Washington University Medical School
- 1982-1985- Assistant Professor; The University of Texas at Austin
- 1985-1990 Associate Professor; The University of Texas at Austin
- 1990-present Professor; Department of Kinesiology and Health Education, University of Texas at Austin

Honors

- ① Citation Award- American College of Sports Medicine- (to be presented in Denver, May 2006)
North American Delegate. Sports Nutrition Working Group. International Olympic Committee (2003-now)
President's Lecture: 50th Annual Meeting of The American College of Sports Medicine (2003)
- ② Keynote Speaker: 5th International Olympic Committee World Congress on Sport Sciences (1999)
- ③ Distinguished Faculty Award for 2002. College of Education. The University of Texas at Austin
Honor Award: Texas Chapter of The American College of Sports Medicine (2000)
- ④ Co-Editor-in-Chief, *International Journal of Sports Medicine* (1992-1994)
Fellow (#378) of the American Academy of Kinesiology and Physical Education (1997)
Ambassador of The American College of Sports Medicine (1984-1990)
Louise Spence Griffeth Fellowship for Excellence at The University of Texas; (1986-91)
Environmental and Exercise Physiology Steering Committee Member of APS (1997-2000)
Faculty Research Assignment; Dept of Human Biology; Rijksuniversiteit Limburg, The Netherlands
Editorial Board Member: *Journal of Applied Physiology*; (1989-1996) (1999-now)
Medicine and Science in Sports and Exercise (1989-now)
Postdoctoral Research Fellowship HL-07081; AG-00078 (1979-1982)

Other Indirect Honors: Supervising Professor

- Jeffrey F. Horowitz- Outstanding Doctoral Dissertation. The University of Texas 1995-1996
- Ricardo Mora-Rodríguez - Outstanding Doctoral Dissertation. The University of Texas 1997-1998

Grants and Contracts and Gifts to The University of Texas: Totaling > \$1.5 million over tenure-

CL 122

Updated-3/22/05

Professional Societies

Fellow of The American College of Sports Medicine (1990)

Texas Chapter of the American College of Sports Medicine (President 1986-1987)

The American Physiological Society (APS); (1984-now)

American Institute of Nutrition (1994-now)

American Society for Clinical Nutrition (1994-now)

American Academy of Kinesiology and Physical Education (1997-now)

Edited Books

Food, Nutrition and Sports Performance II. The International Olympic Committee Consensus on Sports Nutrition. Editors: RJ Maughan, LM Burke, and EF Coyle. Routledge Publishing, 2004.

Data Based Peer Reviewed Publications: (not including 30 review articles and 26 chapters)

86. Coyle, E.F. Improved muscular efficiency displayed as 'Tour de France' champion matures. *Journal of Applied Physiology*. 98: 22191-2196, 2005.
85. Zderic TW, , Schenk S, Davidson CJ, Byerley LO, Coyle EF. Manipulation of dietary carbohydrate and muscle glycogen affects glucose uptake during exercise when fat oxidation is impaired by Beta-adrenergic blockade. *American Journal of Physiology Physiology : Endocrinol. Metab.* 287: 1195-1201, 2004.
84. Zderic TW, Davidson CJ, Schenk S, Byerley LO, Coyle EF. High-fat diet elevates resting intramuscular triglyceride concentration and whole body lipolysis during exercise. *American Journal of Physiology Physiology : Endocrinol. Metab.* 286: 217-225, 2004.
83. Schenk, S. Davidson,CJ, Zderic TW, Byerley LO, Coyle EF. Different glycemic indexes of breakfast cereals are not due to glucose entry into blood but to glucose removal by tissue. *American Journal of Clinical Nutrition*. 78: 742-748, 2003.
82. Mora-Rodriguez R, Hodgkinson BJ, Byerley LO and Coyle EF. Effects of β -adrenergic receptor stimulation and blockade on substrate metabolism during submaximal exercise. *American Journal of Physiology Physiology : Endocrinol. Metab.* 280:E752-760, 2001.
81. Coyle, EF, Jeukendrup AE, Oseto, MC, Hodgkinson, BJ and Zderic, TW. Low-fat diet alters intramuscular substrates and reduces lipolysis and fat oxidation during exercise. *American Journal of Physiology Physiology : Endocrinol. Metab.* 280(3): E391-398, 2001.
80. Martin JC, Diedrich D, Coyle EF: Learning effects associated with maximal power testing: implications for validity. *International Journal of Sports Medicine* 21(7): 485-487, 2000.
79. Romijn, J.A., Coyle EF, Sidossis LS, Rosenblatt J, Wolfe RR. Substrate metabolism during different exercise intensities in endurance-trained women. *Journal of Applied Physiology* 88:1707-1714, 2000.
78. Mora-Rodriguez R, Coyle EF: Effects of plasma epinephrine on fat metabolism during exercise: interactions with exercise intensity. *American Journal of Physiology Physiology : Endocrinol. Metab.* 278: E669-676, 2000.
77. Fritzsche RG, Coyle EF: Cutaneous blood flow during exercise is higher in endurance-trained humans *Journal of Applied Physiology Physiology* 88: 738-744, 2000.
76. Fritzsche RG, Switzer TW, Hodgkinson BJ, Lee SH, Coyle EF: Water and carbohydrate ingestion during prolonged exercise increase maximal neuromuscular power *Journal of Applied Physiology* 88: 730-737, 2000.
75. Gonzalez-Alonso J, Mora-Rodriguez R, Coyle EF: Stroke volume during exercise: influence of environment and hydration. *American Journal of Physiology (Heart Circ. Physiol.)* 278: H321-H330, 2000.
74. Horowitz JF, Mora-Rodriguez R, Byerley LO, Coyle EF: Pre-exercise medium chain triglyceride ingestion does not reduce muscle glycogen utilization during high intensity exercise. *Journal of Applied Physiology* 88(1): 219-225, 2000.
73. Gonzalez-Alonso J, Mora-Rodriguez R, Coyle EF: Supine exercise restores the reductions in cardiac output and skin blood flow with dehydration. *American Journal of Physiology* 277 (Heart Circ. Physiol. 46): H576-H583, 1999.
72. Horowitz JF, Mora-Rodriguez R, Byerley LO, Coyle EF: Substrate metabolism when subjects are fed carbohydrate during exercise. *American Journal of Physiology* 276 (Endocrinol. Metab. 39) E828-E835, 1999.

71. Fritzsche RG, Switzer TW, Hodgkinson BJ, Coyle EF: Stroke volume decline during prolonged exercise is influenced by the increase in heart rate. *Journal of Applied Physiology* . 86(3): 799-805, 1999.
70. Martin JC, Wagner BM, Coyle EF: Inertial-load method determines maximal cycling power in a single exercise bout. *Medicine and Science in Sports and Exercise* 29(11):1505-12, 1997.
69. Horowitz JF, Mora-Rodriguez R, Byerley LO, Coyle EF: Lipolytic suppression following carbohydrate ingestion limits fat oxidation during exercise. *American Journal of Physiology* 273(4 Pt 1):E768-75, 1997.
68. Coyle EF, Jeukendrup AE, Wagenmakers AJ, Saris WH: Fatty acid oxidation is directly regulated by carbohydrate metabolism during exercise. *American Journal of Physiology* 273(2 Pt 1):E268-75, 1997
67. Gonzalez-Alonso J, Mora-Rodriguez R, Below PR, Coyle EF: Dehydration markedly impairs cardiovascular function in hyperthermic endurance athletes during exercise. *Journal of Applied Physiology* 82(4):1229-1236, 1997.
66. Klein S, Weber JM, Coyle EF, Wolfe RR: Effect of endurance training on glycerol kinetics during strenuous exercise in humans. *Metabolism* 45(3):357-361, 1996.
65. Mora-Rodriguez R, Gonzalez-Alonso J, Below PR, Coyle EF: Plasma catecholamines and hyperglycemia influence thermoregulation in man during prolonged exercise in the heat. *Journal of Physiology (Lond)*. 491(Pt 2):529-540, 1996.
64. Klein S, Coyle EF, Wolfe RR: Effect of exercise on lipolytic sensitivity in endurance-trained athletes. *Journal of Applied Physiology* 78(6):2201-2206, 1995.
63. Gonzalez-Alonso J, Mora-Rodriguez R, Below PR, Coyle EF: Dehydration reduces cardiac output and increases systemic and cutaneous vascular resistance during exercise. *Journal of Applied Physiology* 79(5):1487-96, 1995.
62. Romijn JA, Coyle EF, Sidossis LS, Zhang XJ, Wolfe RR: Relationship between fatty acid delivery and fatty acid oxidation during strenuous exercise. *Journal of Applied Physiology* 79(6):1939-45, 1995.
61. Below PR, Mora-Rodriguez R, Gonzalez-Alonso J, Coyle EF: Fluid and carbohydrate ingestion independently improve performance during 1 h of intense exercise. *Medicine and Science in Sports and Exercise* 27(2):200-210, 1995.
60. Klein S, Coyle EF, Wolfe RR: Fat metabolism during low-intensity exercise in endurance-trained and untrained men. *American Journal of Physiology* 267(6 Pt 1):E934-E940, 1994.
59. Moon JK, Coggan AR, Hopper MK, Baker LE, Coyle EF: Stroke volume measurement during supine and upright cycle exercise by impedance cardiography. *Annals of Biomedical Engineering* 22(5):514-523, 1994.
58. Horowitz JF, Sidossis LS, Coyle EF: High efficiency of type I muscle fibers improves performance. *International Journal of Sports Medicine* 15(3):152-157, 1994.
57. Heaps CL, Gonzalez-Alonso J, Coyle EF: Hypohydration causes cardiovascular drift without reducing blood volume. *International Journal of Sports Medicine* 15(2):74-79, 1994.
56. Romijn JA, Coyle EF, Sidossis LS, Gastaldelli A, Horowitz JF, Endert E, Wolfe RR: Regulation of endogenous fat and carbohydrate metabolism in relation to exercise intensity and duration. *American Journal of Physiology* 265(3 Pt 1):E380-391, 1993.
55. Romijn JA, Klein S, Coyle EF, Sidossis LS, Wolfe RR: Strenuous endurance training increases lipolysis and triglyceride-fatty acid cycling at rest. *Journal of Applied Physiology* 75(1):108-113, 1993.
54. Farrell PA, Wilmore JH, Coyle EF, Billing JE, Costill DL: Plasma lactate accumulation and distance running performance. 1979 [classical article] *Medicine and Science in Sports and Exercise* 25(10):1091-1097; discussion 1089-90, 1993.
53. Montain SJ, Coyle EF: Influence of the timing of fluid ingestion on temperature regulation during exercise. *Journal of Applied Physiology* 75(2):688-695, 1993.
52. Sinacore DR, Coyle EF, Hagberg JM, Holloszy JO: Histochemical and physiological correlates of training- and detraining-induced changes in the recovery from a fatigue test. *Physical Therapy* 73(10):661-667, 1993.

51. Horowitz JF, Coyle EF: Metabolic responses to preexercise meals containing various carbohydrates and fat. *American Journal of Clinical Nutrition* 58(2):235-241, 1993.
50. Montain SJ, Coyle EF: Influence of graded dehydration on hyperthermia and cardiovascular drift during exercise. *Journal of Applied Physiology* 73(4):1340-1350, 1992.
49. Montain SJ, Coyle EF: Fluid ingestion during exercise increases skin blood flow independent of increase in blood volume. *Journal of Applied Physiology* 73:903-910, 1992.
48. Sidossis LS, Horowitz JF, Coyle EF: Load and velocity of contraction influence gross and delta mechanical efficiency. *International Journal of Sports Medicine* 13(5):407-411, 1992.
47. Gonzalez-Alonso J, Heaps CL, Coyle EF: Rehydration after exercise with common beverages and water. *International Journal of Sports Medicine* 13(5):399-406, 1992.
46. Coyle EF, Sidossis LS, Horowitz JF, Beltz JD: Cycling efficiency is related to the percentage of type I muscle fibers. *Medicine and Science in Sports and Exercise* 24(7):782-8, 1992.
45. Romijn JA, Coyle EF, Hibbert J, Wolfe RR: Comparison of indirect calorimetry and a new breath $^{13}\text{C}/^{12}\text{C}$ ratio method during strenuous exercise. *American Journal of Physiology (Endocrinol Metabolism)* 26:E64-E71, 1992.
44. Wilson JR, Coyle EF, Osbakken M: Effect of heart failure on skeletal muscle in the dog. *American Journal of Physiology* 262(Heart Circ Physiol 31):H993-H998, 1992.
43. Kautz SA, Feltner ME, Coyle EF, Baylor AM: The pedaling technique of elite endurance cyclists: changes with increasing workload at constant cadence. *International Journal of Sport Biomechanics* 7:29-53, 1991.
42. Montain SJ, Hopper MK, Coggan AR, Coyle EF: Exercise metabolism at different time intervals after a meal. *Journal of Applied Physiology* 70:882-888, 1991.
41. Coyle EF, Hamilton M, Alonso JG, Montain SJ, Ivy JL: Carbohydrate metabolism during intense exercise when hyperglycemic. *Journal of Applied Physiology* 70:834-840, 1991.
40. Coyle EF, Feltner ME, Kautz SA, Hamilton MT, Montain SJ, Baylor AM, Abrahams LD, Petrek GW: Physiological and biochemical determinants of elite endurance cycling performance. *Medicine and Science in Sports and Exercise* 23:93-107, 1991.
39. Hamilton MT, Gonzalez-Alonso J, Montain SJ, Coyle EF: Fluid replacement and glucose infusion during exercise prevents cardiovascular drift. *Journal of Applied Physiology* 71:871-877, 1991.
38. Ryan R, Coyle EF, Quick RW: Blood lactate profile throughout a training season in elite female swimmers. *Journal of Swimming Research* 6(3):5-9, 1990.
37. Coyle EF, Hopper MK, Coggan AR: Maximal oxygen uptake relative to plasma volume. *International Journal of Sports Medicine* 11:116-119, 1990.
36. Mancini DM, Coyle EF, Coggan AR, Beltz J, Ferraro N, Montain S, Wilson JR: Contribution of intrinsic skeletal muscle changes to ^{31}P NMR skeletal muscle metabolic abnormalities in patients with chronic heart failure. *Circulation* 80(5) 1338-1346, 1989.
35. Coggan AR, Coyle EF: Metabolism and performance following carbohydrate ingestion late in exercise. *Medicine and Science in Sports and Exercise* 21:59-65, 1989.
34. Coggan AR, Coyle EF: Effect of carbohydrate feedings during high intensity exercise. *Journal of Applied Physiology* 65:1703-1709, 1988.
33. Coyle EF, Coggan AR, Hopper MK, Walters TJ: Determinants of endurance in well-trained cyclists. *Journal of Applied Physiology* 64:2622-2630, 1988.
32. Ivy JL, Katz AL, Cutler CL, Sherman WM, Coyle EF: Muscle glycogen synthesis after exercise: effect of time of carbohydrate ingestion. *Journal of Applied Physiology* (64(4): 1480-1485, 1988.
31. Hopper MK, Coggan AR, Coyle EF: Exercise stroke volume relative to plasma volume expansion. *Journal of Applied Physiology* 64:404-408, 1988.
30. Coggan AR, Coyle EF: Reversal of fatigue during prolonged exercise by carbohydrate infusion or ingestion. *Journal of Applied Physiology* 63:2388-2395, 1987.

29. Coyle EF, Coggan AR, Hemmert MK, Ivy JL: Muscle glycogen utilization during prolonged strenuous exercise when fed carbohydrate. *Journal of Applied Physiology* 61:165-172, 1986.
28. Coyle EF, Hemmert MK, Coggan AR: Effects of detraining upon cardiovascular responses to exercise: role of blood volume. *Journal of Applied Physiology* 60:95-99, 1986.
27. Martin WH, Coyle EF, Bloomfield SA, Ehsani AA: Effects of physical deconditioning after intense endurance training of left ventricular dimensions and stroke volume. *Journal of American College of Cardiology* 7:982-989, 1986.
26. Coyle EF, Martin WH, Bloomfield SA, Lowry OH, Holloszy JO: Effects of detraining upon responses to submaximal exercise. *Journal of Applied Physiology* 59:853-859, 1985.
25. Coyle EF, Coggan AR, Hemmert MK, Lowe RC, Walters TJ: Substrate usage during prolonged exercise following a pre-exercise meal. *Journal of Applied Physiology* 59:429-433, 1985.
24. Martin WH, Coyle EF, Ehsani AA: Cardiovascular sensitivity of epinephrine in the trained and untrained states. *American Journal of Cardiology* 54:1326-1330, 1984.
23. Martin WH, Coyle EF, Joyner M, Santeusanio D, Ehsani AA, Holloszy JO: The effects of stopping exercise training on epinephrine-induced lipolysis in man. *Journal of Applied Physiology* 56:845-848, 1984.
22. Hintz CS, Coyle EF, Kaiser KK, Chi MM, Lowry OH: Comparison of muscle fiber typing by quantitative enzyme assays and by myosin ATPase staining. *Journal of Histochemistry and Cytochemistry* 32:655-660, 1984.
21. Coyle EF, Martin WH, Sinacore DR, Joyner MJ, Hagberg JM, Holloszy JO: Time course of loss of adaptations after stopping prolonged intense endurance training. *Journal of Applied Physiology* 57:1857-1864, 1984.
20. Hagberg JM, Coyle EF: Physiological comparison of competitive racewalking and running. *International Journal of Sports Medicine* 5:74-77, 1984.
19. Martin WH, Heath G, Coyle EF, Bloomfield SA, Holloszy JO, Ehsani AA: Effect of prolonged intense endurance training on systolic time intervals in patients with coronary artery disease. *American Heart Journal* 107:75-81, 1984.
18. Miller JM, Coyle EF, Sherman WM, Hagberg JM, Costill DL, Fink WJ, Terblanche SE, Holloszy JO: Effect of glycerol feeding on endurance and metabolism during prolonged exercise in man. *Medicine and Science in Sports and Exercise* 15:237-242, 1983.
17. Chi MMY, Hintz CS, Coyle EF, Martin WH, Ivy JL, Nemeth PM, Holloszy JO, Lowry OH: Effects of detraining on enzymes of energy metabolism in individual human muscle fibers. *American Journal of Physiology* 244:C276-C287, 1983.
16. Coyle EF, Hagberg JM, Hurley BF, Martin WH, Ehsani AA, Holloszy JO: Carbohydrate feedings during prolonged strenuous exercise can delay fatigue. *Journal of Applied Physiology* 55:230-235, 1983.
15. Hagberg JM, Coyle EF: Physiological determinants of endurance performance as studied in competitive racewalkers. *Medicine and Science in Sports and Exercise* 15(4): 287-289, 1983.
14. Coyle EF, Martin WH, Ehsani AA, Hagberg JM, Bloomfield SA, Sinacore DR, Holloszy JO: Blood lactate threshold in some well trained ischemic heart disease patients. *Journal of Applied Physiology* 54:18-23, 1983.
13. Rotkis TC, Cote R, Coyle EF, Wilmore JH: Relationship between high density lipoprotein cholesterol and weekly running mileage. *Journal of Cardiac Rehab* 2(2):109-112, 1982.
12. Hagberg JM, Coyle EF, Carroll JE, Miller JM, Martin WH, Brooke MH: Exercise hyperventilation in patients with McArdle's disease. *Journal of Applied Physiology* 52:991-994, 1982.
11. Wilmore JH, Farrell PA, Norton AC, Cote RW III, Coyle EF, Ewy GA, Temkin LP, Billing JE: An automated, indirect assessment of cardiac output during rest and exercise. *Journal of Applied Physiology* 52(6): 1493-1497, 1982.

10. Ehsani AA, Martin WH, Heath, GW, Coyle EF: Cardiac effects of prolonged and intense exercise training in patients with coronary artery disease. *American Journal of Cardiology* 50:246-254, 1982.
9. Coyle EF, Feiring DC, Rotkis TC, Cote RW, Roby FB, Lee W, Wilmore JH: The specificity of power improvements through slow and fast isokinetic training. *Journal of Applied Physiology* 51:1437-1442, 1981.
8. Farrell PA, Wilmore JH, Coyle EF: Exercise heart rate as a predictor of running performance. *Research Quarterly of Exercise and Sport* 51(2): 417-421, 1980.
7. Costill DL, Coyle EF, Fink WJ, Lesmes GR, Witzmann FA: Adaptations in skeletal muscle following strength training. *Journal of Applied Physiology* 46:96-99, 1979.
6. Coyle EF, Costill DL, Lesmes GL: Leg extension power and muscle fiber composition. *Medicine and Science in Sports* 11:12-15, 1979.
5. Farrell PA, Wilmore JH, Coyle EF, Billing JE, Costill DL: Plasma lactate accumulation and distance running performance. *Medicine and Science in Sports* 11(4):338-344, 1979.
4. Lesmes GR, Costill DL, Coyle EF, Fink WJ: Muscle strength and power changes during maximal isokinetic training. *Medicine and Science in Sports and Exercise* 10(4): 266-269, 1978.
3. Coyle EF, Bell S, Costill DL, Fink WJ: Skeletal muscle characteristics of elite shot-putters. *Research Quarterly* 49:278-284, 1978.
2. Coyle EF, Costill DL, Fink WJ, Hoopes DG: Gastric emptying rates for selected athletic drinks. *Research Quarterly* 49(2): 119-124, 1978.
1. Costill, D.L., Coyle EF, Dalsky, GD, Evans W, Fink W, Hoopes, D. Effects of elevated plasma FFA and insulin on muscle glycogen usage during exercise. *Journal of Applied Physiology* 43:695-699, 1977.

Review Articles (Peer Reviewed)

32. Coyle EF. Fluid and fuel intake during exercise. *Journal of Sports Sciences*. 22: 39-55, 2004.
31. Coyle EF. Fluid and fuel intake during exercise. In: *Food, Nutrition and Sports Performance II. The International Olympic Committee Consensus on Sports Nutrition*. Editors: RJ Maughan, LM Burke, and EF Coyle. Routledge Publishing, 2004.
30. Coyle EF. Cardiovascular drift during prolonged exercise. p 153-172. In: *Exercise, Nutrition and Environmental Stress*. Editors: H. Nose, L. Spriet and K. Imaizumi. Cooper Publishing Group. 2002.
29. Coyle EF and Gonzalez-Alonso JA. Cardiovascular drift during prolonged exercise: new perspectives. *Exercise and Sport Sciences Reviews*. 29(2): 88-92, 2001.
28. Coyle EF: Deconditioning and Retention of Adaptations Induced by Endurance Training. *ACSM Resource Manual for Guidelines for Exercise Testing and Prescription*. 4nd edition. American College of Sports Medicine. Williams & Wilkins. Baltimore, 2001; pgs 191-197.
27. Coyle EF: Physical activity as a metabolic stressor. *American Journal of Clinical Nutrition* 72: 512-520 (suppl): 2000.
26. Coyle EF: Physiological determinants of endurance performance. *Journal of Science and Medicine in Sport*. 2(3): 181-189, 1999.
25. Coyle EF, Hodgkinson, BJ : Influence of dietary fat and carbohydrate on metabolic and performance responses. In: *Perspectives in Exercise Science and Sports Medicine*. Vol 11 (Ed.) DR Lamb and R Murray. Benchmark Press, Carmel IN, 1999.
24. Sawka MN, Coyle EF: Influence of body water and blood volume on thermoregulation and exercise performance in the heat. *Exercise Sport Science Reviews*. 27: 167-218, 1999.
23. Coyle EF. Fat oxidation during exercise: role of lipolysis, FFA availability and glycolytic flux. . In: *Biochemistry of Exercise* . Vol 10. (Ed.)M. Hargreaves and M. Thompson. Human Kinetics, Champaign, ILL, 1999; p263-274.
22. Gonzalez-Alonso J, Coyle EF: Efectos fisiologicos de la deshidratacion. *Educacion Fisica Y Deportes*. 54: 46-52, 1998.

21. Coyle EF: Cardiovascular drift during prolonged exercise and the effects of dehydration. *International Journal of Sports Medicine* 19: S121-S124, 1998.
20. Coyle EF: Deconditioning and Retention of Adaptations Induced by Endurance Training. *ACSM Resource Manual for Guidelines for Exercise Testing and Prescription*. 2nd edition. American College of Sports Medicine. Williams & Wilkins. Baltimore, 1998.
19. Convertino VA, Armstrong LE, Coyle EF, Mack GW, Sawka MN, Senay LC Jr, Sherman WM. American College of Sports Medicine position stand. Exercise and fluid replacement. *Medicine and Science in Sports and Exercise* 28(1):i-vii, 1996.
18. Coyle EF: Integration of the physiological factors determining endurance performance ability. *Exercise Sport Science Reviews* 23:25-63, 1995.
17. Coyle EF: Substrate utilization during exercise in active people. *American Journal of Clinical Nutrition* 61(4 Suppl): 968S-979S, 1995.
16. Coyle EF, Spriet L, Gregg S, Clarkson P: Introduction to physiology and nutrition for competitive sport. In: *Perspectives in Exercise Science and Sports Medicine*. Vol 7. (Ed.) DR Lamb, HG Knuttgen, R Murray. Benchmark Press, Carmel IN, 1994.
15. Bloomfield SA, Coyle EF: Bed Rest Detraining and Retention of Training Induced Adaptations: A Review. *Resource Manual for Guidelines for Exercise Testing and Prescription*. 2nd edition. American College of Sports Medicine. Lea & Febiger. Philadelphia, 1993.
14. Coyle EF, Montain SJ: Thermal and Cardiovascular Responses to Fluid Replacement During Exercise In: *Perspectives in Exercise Science and Sports Medicine*. Vol 5. (Ed.) CV Gisolfi, DR Lamb. Benchmark Press, Carmel IN., 1993.
13. Coyle EF, Coyle E. Rating Carbohydrates That Speed Recovery From Intense Training. *The Physician and Sports Medicine* 21(2): 111-123, 1993.
12. Coyle EF: Carbohydrate feeding during exercise. *International Journal of Sports Medicine* 13 Suppl 1:S126-8, 1992.
11. Coyle EF, Montain SJ: Benefits of fluid replacement with carbohydrate during exercise. *Medicine and Science in Sports and Exercise* 24(9 Suppl):S324-30, 1992.
10. Coyle EF, Montain SJ: Carbohydrate and fluid ingestion during exercise: are there trade-offs? *Medicine and Science in Sports and Exercise* 24(6):671-8, 1992.
9. Coyle EF: Carbohydrate supplementation during exercise. *Journal of Nutrition* 122(3 Suppl):788-95, 1992.
8. Coyle EF: Carbohydrate feedings: effects on metabolism, performance and recovery. In: *Advances in Nutrition and Top Sport*. (Ed) F Brouns. Karger, Basel Switzerland. *Medicine and Sport Science* 32: 1-14, 1991.
7. Coggan AR, Coyle EF: Carbohydrate ingestion during prolonged exercise: effects on metabolism and performance. *Exercise Sports Science Reviews* 19: 1-40, 1991.
6. Coyle EF: Timing and method of increased carbohydrate intake to cope with heavy training, competition and recovery. *Journal of Sports Science* 9 Spec No: 29-51; discussion 51-52, 1991.
5. Coyle EF, Hamilton M: Fluid replacement during exercise: effects on physiological homeostasis and performance. In: *Fluid Homeostasis During Exercise*. *Perspectives in Exercise Science and Sports Medicine*. Vol 3. (Ed.) CV Gisolfi, DR Lamb. Benchmark Press, Carmel IN, 1990.
4. Coyle EF: Detraining and retention of training induced adaptations: A review. In: *Resource Manual for Guidelines for Exercise Testing and Prescription*. *American College of Sports Medicine*. Lea & Febiger, Philadelphia, 1998.
3. Coyle EF: Ergogenic aids. *Clinical Sports Medicine* 3(3): 731-742, 1984.
2. Coyle EF, Coggan AR: Effectiveness of carbohydrate feeding in delaying fatigue during prolonged exercise. *Sports Medicine* 1:446-458, 1984.
1. Holloszy JO, Coyle EF: Adaptations of skeletal muscle to endurance exercise and their metabolic consequences. *Journal of Applied Physiology* 56(4):831-838, 1984.

CHAPTERS AND NON-REFEREED ARTICLES

28. Coyle EF: Carbohydrate ingestion prior to and during intense exercise. *Proceeding of National Academies: Food and Nutrition Board (August) 2004*.
27. Coyle EF. Highs and Lows of carbohydrate Diets . *Sports Science Exchange* Vol. 17(2), 2004.
26. Berning J, Coyle EF, Garcia PR, O'Connor H, Orbeta S, Terrados N: Sports foods for athletes: what works? *Sports Science Exchange (Roundtable)* Vol. 9(2), 1998.
25. Coyle EF: Fat metabolism during exercise. *Sports Science Exchange* Vol. 9(8), 1996.
24. Coyle EF: Fluid and carbohydrate replacement during exercise: how much and why? *Sports Science Exchange* Vol. 7(3), 1994.
23. Burke ER, Coyle EF, Daniels J, Maughan R: Are heart rate monitors worth the bother? *Sports Science Exchange (Roundtable)* Vol. 5(2), 1994.
22. Coyle EF: Carbohydrate supplementation: why, when, what and how much? *Insider News on Sports Nutrition*. Summer 1993.
21. Coyle EF: Carbohydrates and athletic performance. *Gatorade News*. Translated into six languages. Summer 1993.
20. Coyle EF: Effects of diet on intermittent high intensity exercise. In: *Intermittent high intensity exercise: preparations, stresses and damage limitation*. (Ed.) DDA Macleod, RJ Maughan, C Williams, CR Madeley, JCM Sharp, RW Nutton. E&FN Spon, London, 1992.
19. Coyle EF, JM Davis, AR Coggan, WM Sherman: Current thoughts and practical considerations concerning substrate utilization during exercise. *Sports Science Exchange (Roundtable)*, Vol. 7, Spring 1992.
18. Coyle EF: Carbohydrate feedings and performance. In: *Integration of Medical and Sports Sciences*. (Ed) Y Sato, J Poortmans, I Hashimoto, Y Oshida, Karger, Basel Switzerland. *Medicine and Sport Science* 37: 356-363, 1992.
17. Coyle EF: Timing and method of increased carbohydrate intake to cope with heavy training, competition and recovery. In: *Food, Nutrition and Sports Performance*. (Ed.) C Williams, JT Devlin. E&FN Spon, London, 1992.
16. Coyle EF: Cycling techniques of elite 40 km time trialists. *Cycling Science* 3(3-4): 8-12 (Sept-Dec) 1991.
15. Coyle EF: Cardiovascular function during exercise: neural control factors. *Sports Science Exchange* 4(24): Sept. 1991.
14. Coyle EF: Carbohydrate feedings: effects on metabolism, performance and recovery. In: *Advances in Nutrition and Top Sport*. (Ed) F Brouns. Karger, Basel Switzerland. *Medicine and Sport Science* 32: 1-14, 1991.
13. Coyle EF: Carbohydrate metabolism and fatigue. In: *Muscle Fatigue: Biochemical and Physiological Aspects*. (Ed.) G Atlan, L Beliveau, P Bouissou. Masson Paris, 1991.
12. Coyle EF: Carbohydrate feedings. *Proceedings of Conference on Sports Nutrition*. Magglingen Switzerland, June 1990.
11. Coyle EF: Nutrition during and after exercise. *Proceedings of Conference on Nutrition and Sports Performance*. Rome Italy, 4/20-21, 1990.
10. Coyle EF: Carbohydrate supplementation during prolonged strenuous exercise. In: *Nutrition et Sport*. (Ed.) H Monod. Masson Paris, 1990.
9. Coyle EF: Detraining and retention of training induced adaptations. *Sports Science Exchange* 2(23), March 1990.
8. Coyle EF, Coggan AR: Timing of carbohydrate supplementation during prolonged strenuous exercise. *Proceedings of a Workshop on Fluid Replacement and Heat Stress*. National Academy Press. Washington DC, 1990.
7. Coyle EF: Carbohydrates and cycling performance. *Cycling Science* December 18-21, 1989.

6. Coyle EF: Detraining application to microgravity. *NASA Proceedings: Countering Space Adaptation with Exercise: Current Issues*, 1989.
5. Coyle EF: Recent advances in carbohydrate metabolism: feeding during exercise. *Proceedings of The 14th International Congress of Nutrition*. Seoul, South Korea. 8/20-25, 1989.
4. Coyle EF: Carbohydrates and athletic performance. *Sports Science Exchange* 1(7), October 1988.
3. Coyle EF: Effects of glucose polymer feeding in fatiguability and the metabolic response to prolonged strenuous exercise. In: *Nutrient Utilization During Exercise* (Ed.) EF Fox. Ross Laboratories, Columbus OH, 1983, p. 43-80.
2. Coyle EF: Gastric emptying characteristics of commercial hydration solutions. In: *Nutrient Utilization During Exercise* (Ed.) EF Fox. Ross Laboratories, Columbus OH, 1983, p. 78-80.
1. Coyle EF, Martin WH, Ehsani AA, Hagberg JM, Holloszy JO: Blood lactate threshold in trained ischemic heart disease patients. In: *Biochemistry of Exercise* (Ed.) Knuttgen, Vogel, J Poortmans. Human Kinetics, Champaign IL, 1983, p. 840-845.

LETTERS TO THE EDITOR & EDITORIALS

Coyle EF: Relationship between fatty acid delivery and fatty acid oxidation during exercise. *Journal of Applied Physiology* 81(3): 1450-1452, 1996.

Coyle EF: Very intense exercise-training is extremely potent and time efficient: a reminder. *Journal of Applied Physiology* . 98: 1983 - 1984, 2005.

Scientific considerations for physiological evaluations of elite athletes
Yorck Olaf Schumacher, Stefan Vogt, Kai Roecker, Andreas Schmid, and Edward F. Coyle
J Appl Physiol, Oct 2005; 99: 1630 - 1631.

Has Armstrong's cycle efficiency improved?
David T. Martin, Marc J. Quod, Christopher J. Gore, and Edward F. Coyle
J Appl Physiol, Oct 2005; 99: 1628 - 1629.

PRESENTATIONS

International/National

1) Un "update" sobre Metabolismo de Carbohidratos y Grasas durante el ejercicio: Una "simple" verdad.

2) Incremento de la eficiencia muscular a partir de la maduración de un Campeón del Tour de France (Lance Armstrong).

3) La restitución de Carbohidratos durante y después de actividades deportivas competitivas.
01 de Octubre, 2005

4) Nutrición durante el ejercicio y la recuperación. Qué, cuánto y dónde?.
11th Symposium of the Medical and Training Application to Exercise and Sport
Ciudad de Mar del Plata, Argentina; 9/30 and 10/1/05

Add BASE

Add Physio/soc

Meals Prior to a Match

FIFA- Federation International Football Association
Zurich, Switzerland. 9/1/05

Nutrient Mix for Recovery From Training and Competition

National Strength and Conditioning Coaches Association Meeting
Louisville, Kentucky. 1/7/04 (2 lectures).

Recovery From Training and Competition

China National Meeting on Sports Nutrition (1st Annual)
Beijing, China. 11/5/04.

Carbohydrate Ingestion Prior to and During Intense Exercise.

The National Academies: Food and Nutrition Board
Committee on Optimization of Nutrient Composition of Military Rations.
UASRIEM, Natick, MA 8/9/04.

The IOC Consensus on Sports Nutrition: Macronutrients and Fluids

Annual Meeting of the American College of Sports Medicine
Indianapolis, IN, 6/05/04.

50 Years of Progress in the One-Mile Run: Physiological Limits

Annual Meeting of the American College of Sports Medicine
Indianapolis, IN, 6/05/04.

Hydration and Physical Performance: Laboratory Studies: Joint Conference of ACSM and NATO.
Hydration and Physical Activity Boston, MA. 12/9/03

Energy to Burn: Science or Hype in Substrate Metabolism. SCAN Sports Nutrition Workshop (Pre-FNCE). American Dietetic Association Annual Meeting. San Antonio, TX. 10/25/03.

Nutritional Strategies for Competitive Athletes

Fluid, Electrolyte and Substrate Intake During Exercise

The Physiology of Endurance and Lance

Medical Conference for the Hawaii Ironman World Championships
Kona, HI. 10/13-14/03

Recovery From Exercise . Nutrition and Training for Sport. Conference Sponsored by Gatorade Sports Sciences Institute. Chicago, IL. 7/25/03.

Fluid and Substrate Intake During Exercise. International Olympic Committee- Working Group on Sports Nutrition. Consensus Conference. Laussane, Switzerland. 6/16/03.

Nutrición para la recuperación: ¿Cuál es la mezcla correcta de Nutrimientos? 6/7/03

¿Cuanta proteína, grasa y carbohidratos, realmente necesita el deportista? 6/6/03

International Symposium for Sports Nutrition. Universidad Iberoamericana. Mexico City. Mexico

Endurance Performance Physiology: Application and Remaining Mysteries

President's Lecture: 50th Annual Meeting of The American College of Sports Medicine
San Francisco, California 5/28/03.

Anti-oxidants and Exercise: Perspective of an Applied Physiologists- Symposium Discussant
Annual Meeting of the American College of Sports Medicine
San Francisco, California, 5/27/03.

Dehydration and Hyperthermia During Exercise Increase Muscle Glycogenolysis and Not Plasma Glucose Kinetics
XXXIV International Congress of Physiological Sciences
Christchurch, New Zealand. 8/30/01.

Sugar Feeding During Exercise In the Heat Increase Plasma Glucose Kinetics Without Altering Glycogen Oxidation
XIIIth International Conference on the Physiology of Food and Fluid Intake
Port Douglas, Australia. 8/22/01.

The ACSM Recommendations & Rationale for Fluid Replacement During Exercise
Annual Meeting of the American College of Sports Medicine.
Baltimore, Maryland. 5/30/01.

Ergogenic Aids and Drug Use In Cycling
American Medical Society for Sports Medicine: Annual Meeting
San Antonio, Texas 4/8/01

Cardiovascular Drift During Prolonged Exercise
Sport Science Network 2000
Nagano, Japan. 10/13/00.

Substrate Selection During Exercise- Tutorial Lecture
Annual Meeting of the American College of Sports Medicine.
Indianapolis, Indiana. 6/3/00.

Human Endurance Performance- Keynote Speaker
Sport Medicine- British Columbia: Annual Conference
Vancouver, New Westminster, British Columbia, Canada, 4/1/00.

Carbohydrate and Sport Performance
VII COSUMED Congress (South American Confederation of Sports Medicine),
and the III AMEDCO Congress (Colombian Association of Sports Medicine). 3/16/00.

Physiology of Endurance Performance.
I World Congress of Graduate Sports Medicine
Santafé de Bogotá, Columbia, 3/14/00

Determinants of Endurance Exercise Performance- Biological Science Keynote Speaker
Fifth International Olympic Committee World Congress on Sport Sciences
Sydney, Australia. 11/2/99.

Physiological and Performance Benefits of Optimal Hydration
Conference on Exercise Metabolism and Nutrition

Melbourne University, Melbourne, Australia. 10/29/99.

Physiological and Performance Benefits of Optimal Hydration

1999 Gatorade Sports Science Conference
Chicago, IL. 6/25/99

Fueling and Cooling During Exercise

National Athletic Trainer's Association 50th Annual Meeting, Kansas City MO. 6/19/99

Fluid Replacement During Exercise

International Symposium of Sports Medicine
Hong Kong, China. 6/16/99
Guangzhou, China. 6/14/99
Shanghi, China. 6/11/99

Dietary Carbohydrate and Fat : Effects on Metabolism

Christchurch, New Zealand(12/3/98); Auckland, New Zealand (12/8/98); Dunedin, New Zealand (12/10/98).

Nutrition for Active People and Athletes: What Do you Really Need ?

Dr. Tom Anderson Memorial Lecture / New Zealand Dietetic Association
Christchurch , New Zealand (12/2/98); Auckland, New Zealand (12/7/98); Dunedin, New Zealand (12/9/98).

Pre-Exercise Meals: Effects on Metabolism and Performance 10/6/98

Carbohydrate Supplementation For Strength Training 10/5/98

Carbohydrate Supplementation For Intermittent Exercise 10/5/98

The Interaction of Carbohydrate and Fat Metabolism During Exercise 10/5/98

6th International Symposium of the Actualization on Sport Sciences. Rosario, Argentina.

Exercise Training and Substrate Utilization. 6/4/98 Diet Composition and Exercise Performance:

High Fat or High Carbohydrate ?. 6/6/98 Annual Meeting of the American College of Sports Medicine.Orlando, FL.

Dietary Fat and Carbohydrate: What Balance ?

Fit/Fat: Diet for Health

ACSM's Health and Fitness Summit. Austin, Texas 4/30/98 and 5/1/98 and 5/2/98.

Choice of Substrate During Exercise. 2nd Conference of Copenhagen Muscle Research Centre

The Royal Danish Academy of Sciences. Copenhagen, Denmark, 10/25/97.

Nutrition and the Athlete. American Osteopathic Association Annual Conference. San Antonio, Texas, 10/20/97.

Lipid Oxidation During Exercise: Role of Lipolysis, FFA Availability and Glycolytic Flux

10th International Conference on Biochemistry of Exercise. Sydney, Australia, 7/16/97.

Fuels for Exercise. Recent Advances in Sports Nutrition. The University of Sydney Deakin University Sydney, Australia, 7/14/97.

Fuels for Exercise. Recent Advances in Sports Nutrition. Deakin University. Melbourne, Australia, 7/11/97.

Intramuscular Triglyceride Oxidation During Exercise Acutely Increases With Reduced Plasma FFA Mobilization and Oxidation. Experimental Biology Meetings. New Orleans, Louisiana, 4/2/97.

Fat Metabolism During Exercise. Advances in Training and Nutrition for Endurance Sports. Papendal-Arnheim, The Netherlands, 1/30/97.

Limits of Human Endurance Performance 10/24/96

Cardiovascular Stress of Dehydration and Hyperthermia 10/20/96

Benefits of Fluid Replacement: Role of Plasma Volume and Catecholamines 10/20/96,
Ironman Medical Conference, Kona Hawaii

Heat, Hydration and Athletic Performance: Cardiovascular Effects of Dehydration. 7/11/96

Why Nutrition is Important and Included in the Chain. 7/10/96.

Physical Activity, Sport and Health. The 1996 International Pre-Olympic Scientific Congress. Dallas, Texas.

Physical Activity as a Metabolic Stressor

NIH Workshop on The Role of Dietary Supplements For Physically Active People. National Institutes of Health. Bethesda, Maryland. 6/3/96.

Impairment of Fat Mobilization and Oxidation with Carbohydrate Ingestion. 6/1/96

Glycolytic Flux During Exercise Regulates Fatty Acid Oxidation. 5/30/96

Physiological Determinants of Elite Cycling Performance. 5/29/96

Annual Meeting of the American College of Sports Medicine. Cincinnati.

Fueling and Cooling Endurance Athletes for Peak Performance. Boston Marathon Seminar Series for the 100th Anniversary. Boston, Massachusetts, 4/13/96.

Fuel Selection For the Working Muscle. CEFS Workshop : Carbohydrates In Relationship to Physical Performance. Waterloo, Belgium 12/4/95.

Cardiovascular Drift in Prolonged Exercise: Effects of Dehydration and Rehydration. International Conference on Dehydration, Rehydration and Exercise in the Heat. Nottingham, England. 11/2/95.

Human Endurance Performance: Integrating Physiological Factors 10/3/95

Fluids, Electrolytes and Plasma Volume Changes 10/1/95

Cardiovascular Stress of Dehydration and Hyperthermia 10/1/95

Ironman Medical Conference, Kona Hawaii

Carbohydrate and Performance : Competition and Recreation. Post Graduate Course Co-Sponsored by ACSM and ASCN. Nutrition and Exercise for Performance and Health. Minneapolis, Minnesota. 6/3/95.

Utilization of Substrates During Prolonged Exercise: Carbohydrate vs. Fat 5/7/95

Model of the Physiological Determinants of Endurance Performance 5/7/95

Cardiovascular Responses to Dehydration During Prolonged Exercise 5/6/95

4th International Symposium of the Actualization on Sport Sciences. Rosario, Argentina.

Workshop: Exercise Metabolism Using Stable Isotopes. The Physiological Society. Birmingham, England. 12/21/94.

Physiological and Biochemical Limitations to Performance. The Physiological Society. Birmingham, England. 12/21/94.

Application of Stable Isotopes For Studying Metabolism During Exercise. Rijksuniversiteit Limburg Medical School, Maastricht, The Netherlands 11/2/94.

Carbohydrate and Fluid Ingestion With Exercise. VI Meeting of the Spanish Sports Medicine Federation. Los Narejos (Murcia), Spain. 9/30/94-10/3/94.

Sports Nutrition. FIMS World Congress of Sports Medicine. Athens, Greece 9/12/94.

Effects of Dehydration on Cardiovascular Drift During Prolonged Exercise 5/14/94

Physiological Determinants of Endurance: Competitive Cycling 5/13/94

Carbohydrate Intake To Cope With Training, Competition and Recovery. 5/13/94

3rd International Symposium of the Actualization on Sport Sciences. Rosario, Argentina.

Substrate Utilization in Active People. New Dimensions in Carbohydrates. The American Society for Clinical Nutrition. Washington, DC. 12/13-14/93.

Potential Role of Muscle Fiber Type In Determining Oxygen Drift During Exercise

Annual Meeting of the American College of Sports Medicine. Symposium. Seattle, Washington 6/3/93

Scientific Testing of Olympic Cyclists. Symposium of The Argus Tour. Cape Town, South Africa. 3/12/93.

Pitfalls in the Development of Sports Medicine- The Experience of Leading International Sports Nations. 3/11/93.

Nutritional Aids to Athletic Performance. 3/10/93

Fat or Carbohydrate for Optimal Exercise Performance. 3/10/93

5th South African Sports Medicine Association Congress. Cape Town, South Africa.

Nutrition For Developing Sport Programs. First International Lectures. University of the Western Cape. Cape Town, South Africa. 3/8/93.

Carbohydrate and Sports Nutrition. Johannesburg Dietetic Association: Kellogg Group. BIFA Conference Center. Johannesburg-Midrand. South Africa. 3/4/93.

Biochemistry of Substrate Utilization. Sports Nutrition Speaker Network. Chicago, Illinois. 12/11/92.

Thermoregulatory and Cardiovascular Responses to Fluid Replacement During Exercise. Quaker Oats Conference. Baveno, Italy. 6/18-22/92

Temperature Regulation and Fluid Balance. Nutrition for the Marathon and Other Endurance Sports. The Ohio State University. Columbus, Ohio 4/9-10/92

Carbohydrate Feeding During Exercise. International Scientific Congress on Mountain Sport. Chamonix, France. 2/2-4/92

Future Research in Carbohydrate Metabolism. Sports Nutrition Conference. The American College of Sports Medicine, Indianapolis. 1/10-11/92.

Sports Nutrition: Principles to Practice. Second International World Congress on Sport Sciences. Barcelona, Spain. 10/20/91.

Effects of Diet on Intermittent High Intensity Exercise. Rugby World Cup Sports Medicine Congress. Royal College of Surgeons. Edinburgh, Scotland. 10/23/91.

Nutritional Approach to Exercise and Performance. Institute of Sports Medicine and Science, Agui, Japan, 9/28/91.

Carbohydrate Feedings and Performance. The 8th International Biochemistry of Exercise Conference. Nagoya, Japan, 9/27/91

Metabolic Responses to Exercise. Quaker Oats Conference. Bermuda, 6/24-28/91

Carbohydrate and Fluid Ingestion During Exercise: Are There Trade-Offs? Annual Meeting of the American College of Sports Medicine. Symposium. Orlando, Florida, 5/29/91.

Carbohydrates and Exercise. American Institute of Nutrition Symposium. FASEB Annual Meeting. Atlanta, 4/21/91.

Timing and Method of Increased Carbohydrate Intake to Cope with Heavy Training, Competition and Recovery. International Olympic Committee Consensus Conference- Foods Nutrition and Sports Performance. Lausanne, Switzerland. 2/4-5/91.

Carbohydrate Metabolism and Fatigue. Conference on the Biochemical and Physiological Aspects of Muscular Fatigue. French Physiological Society and INSERM. Paris, 9/20-22/90 France .

Ergogenics: The Enhancement of Sport Performance. Quaker Oats Conference. Maui, Hawaii, 6/14-18/90.

Carbohydrate Feedings: Effects on Metabolism, Performance and Recovery. Conference on Sports Nutrition. Magglingen, Switzerland, 6/6/90.

Carbohydrate Feedings: Effects on Metabolism, Performance and Recovery. FIMS World Congress of Sports Medicine. Amsterdam, Netherlands, 5/31/90.

Nutrition During and After Exercise. Conference on "Nutrition and Sports Performance". Rome, Italy, 4/20-21, 1990.

Detraining Application to Microgravity. Conference on "Countering Space Adaptation with Exercise: Current Issues". NASA, Houston, Texas, 9/26-28/89.

Recent Advances in Carbohydrate Metabolism: Feeding During Exercise. The 14th International Congress of Nutrition. Seoul, South Korea. 8/20-25/89.

Fluid Replacement During Exercise. Quaker Oats Conference on Fluid Homeostasis. Kauai, Hawaii, 6/22-26/89.

Updated-3/22/05

Physiology of Detraining. Colloquia presented at the Annual Meeting of the American College of Sports Medicine. Baltimore, Maryland, 6/1/89.

Carbohydrate Feeding During Prolonged Exercise. Conference on "Nutrition et Sport". Paris, France. 5/25-27/89.

Timing of Carbohydrate Supplementation During Prolonged Strenuous Exercise. Workshops on the Use of Carbohydrate-Electrolyte Solutions by Field Soldiers. National Research Council-National Academy of Science, Washington, D.C., 2/1/89.

Exercise and Diabetes In Youth. Quaker Oats Conference on Youth, Exercise and Sport. Bermuda. 6/23-27/88.

How Do Carbohydrate Feedings Improve Performance in Prolonged Exercise? Annual Meeting of the American College of Sports Medicine. Symposium. Dallas, Texas. 6/25/88.

Dietary Carbohydrate as an Ergogenic Aid During Endurance Exercise. Federation of American Societies for Experimental Biology. Symposium. Las Vegas, Nevada. 5/3/88.

Carbohydrate Feeding During Exercise. Press Conference for Writers. New York, New York. 3/9/88.

Principles of Exercise Training and Nutrition. Japanese Swimming Federation. Osaka, Japan. 11/8/87.

Nutrition for Prolonged Exercise: Energy, Carbohydrate and Fluids. Quaker Oats Conference on Prolonged Exercise. Warwick, Bermuda, 6/25-29/87.

Basics of Muscular Contraction. National Strength and Conditioning Coaches Association National Meeting. Dallas, Texas, 6/85.

Physiological Performance Evaluation with Detraining. United States Olympic Committee First National Conference on Performance Evaluation. Colorado Springs, Colorado, 1/85.

Regional or State or Invited University Lectures

The Lows and Highs of Carbohydrate Diets.
Meeting Fluid Needs to Avoid Hyperthermia and Hyponatremia
Texas Human Nutrition Conference- 32nd Annual. Texas A&M University.
College Station. TX 2/4/05.

The Physiology of Endurance. North East Chapter of the American College of Sports Medicine.
Providence, RI. 11/6/03.

Race Day Nutrition Mistakes. Seminar for Athletes. Hawaii Ironman Triathlon World Championships.
Kona, HI. 10/16/03

Endurance Exercise Physiology- Are School Children Receiving Scientific Coaching? Central States
Chapter of the American College of Sports Medicine. Kansas City, MO. 10/10/03

Optimal Nutrition to Recover From Training. Texas High School Coaches Association. Fort Worth, TX. 7/28/03.

Fat Oxidation During Exercise- What Limits the Rate ? *Keynote Address.* Northwest Chapter of the American College of Sports Medicine. Spokane , WA., 2/22/02.

Cardiovascular Drift and Dehydration. University of Michigan Seminar Series. Department of Kinesiology. Ann Arbor, MI. 9/28/01.

Metabolism During Exercise. Washington University School of Medicine; Division of Geriatrics and Gerontology; St. Louis, MO; 5/23/01.

Nutritional Aids For Athletic Performance : Fact vs. Fiction
Methodist Hospital Sports Medicine Program. Dallas, TX 75237-3460. 12/7/00

New Ideas Regarding Fat Metabolism During Exercise
Texas Women's University. Denton, TX. 12/7/00.

Cardiovascular Drift During Prolonged Exercise: New Perspectives. Midwest Chapter of the American College of Sports Medicine. Grand Rapids, MI., 10/5/00.

Physiological Determinants of Endurance Performance Southeast Chapter of the American College of Sports Medicine .Charlotte, NC., 1/28/00.

Substrate Use During Exercise and Physiological Determinants of Performance
The Chinese University of Hong Kong. Hong Kong, China. 11/9/99.

Overview: Exercise Training in the 21st Century and Physiological Stimuli. Annual Meeting of the Texas Chapter of the American College of Sports Medicine. Houston, TX; 2/26/99.

Regulation of Fat Oxidation During Exercise. Washington University School of Medicine; Division of Geriatrics and Gerontology; St. Louis, MO; 5/13/98.

Physiological Adjustments In Body Fluid Balance: Science and Practice.

Physiological Predictors of Exercise Performance. Latin America Board of Advisors In Science and Education. Second Annual Meeting of the Gatorade Sports Science Institute. 1/ 28, 1998, San Juan, Puerto Rico.

Endurance Performance: The Role of Fluids, Carbohydrates and Fat. The Colloquia on Applied Science in Sports Medicine. M.D. Anderson Cancer Center. Houston, Texas, April 26, 1997.

Fat Oxidation During Exercise: Lipolysis, Training and Diet.
Colloquium Series. University of Colorado- Boulder. Boulder, Colorado. 2/21/97

Fat Oxidation During Exercise: Lipolysis vs. Muscle Mitochondrial Activity Texas Chapter of the American College of Sports Medicine . Sequin, Texas. 2/6/97.

Central States Chapter of the American College of Sports Medicine. Little Rock, Arkansas

Substrate Use During Exercise: Fat vs. Carbohydrate. 10/27/95

Cardiovascular Effects of Dehydration. 10/26/95

Workshop on Journal Publication. Texas Chapter of the American College of Sports Medicine . Houston, Texas. 2/10/94.

Regulation of Fat Metabolism During Exercise. University of Cape Town Medical School. Department of Physiology. Cape Town, South Africa. March 15, 1993.

Muscle Metabolism With Detraining: Implications For Retraining. Texas Chapter of the American College of Sports Medicine . Forth Worth, Texas. 1/22/93.

Cardiovascular Responses to Prolonged Exercise and Dehydration. Midwest Chapter of the American College of Sports Medicine. Miami University of Ohio. Oxford, Ohio. 10/30/92.

Carbohydrate Nutrition During Exercise. Marquette University. Milwaukee, Wisconsin. 12/6/91.

Fluid and Substrate Ingestion During Exercise: Role of Blood Volume and Skin Blood Flow. Southwest Chapter of the American College of Sports Medicine. San Diego, California. 11/23/91.

Blood Glucose and Exercise Performance University of Texas Medical Branch at Galveston. Galveston, Texas. 10/31/90.

Carbohydrate Use During Exercise. Midwest Chapter of the American College of Sports Medicine. Muncie, Indiana.. 10/27-27/1990.

Substrate Ingestion and Utilization During Exercise. Rocky Mountain Chapter of the American College of Sports Medicine. Breckenridge, Colorado. 1/26-28/90.

Carbohydrate Feeding and Performance. Sports Nutrition Update. Chicago, Illinois, 1/19/90

Carbohydrate Supplementation During Prolonged Exercise. Southeast Chapter of the American College of Sports Medicine Lecture Tour.

University of South Carolina. Columbia, South Carolina, 4/12/89

University of North Carolina. Chapel Hill, North Carolina, 4/11/89

University of Virginia. Charlottesville, Virginia, 4/10/89

Carbohydrate Feeding During Prolonged Exercise. Ball State University (Alumni Lecture). Muncie, Indiana. 4/19/88.

Exercise Prescriptions. Annual Meeting of Texas Family Physicians. Austin, Texas, 9/24/88.

Optimizing Nutrition Before and During Competition. A Medical Seminar on Applications in Cycling and Endurance Training. Whitmore College. Spokane, Washington. 7/29/88.

Adaptations to Endurance Training Maintained During Periods of Physical Inactivity. Texas A&M University. College Station. 10/30/87.

Adaptations to Endurance Training Maintained During Periods of Physical Inactivity. University of Texas at Tyler. Tyler. 10/29/87.

Adaptations to Endurance Training Maintained During Periods of Physical Inactivity. Texas College of Osteopathic Medicine. Forth Worth. 10/28/87.

Adaptations to Endurance Training Maintained During Periods of Physical Inactivity. University of Texas at Arlington. 10/28/87.

Exercise in the Prevention and Management of Adult-Onset Diabetes. The 35th Annual Postgraduate Pharmacy Seminar. Austin, Texas. 9/12/87.

Nutritional Aspects of Exercise Performance. Queens College. Flushing, New York, 2/26/87.

Carbohydrate Supplementation During Exercise. Mid-Atlantic Chapter of the American College of Sports Medicine. Hofstra, New York, 2/27/87.

Exercise Training and Detraining. United States Swim Coaches Association. Colorado Springs, Colorado, 12/10/86.

Cardiovascular and Metabolic Effects of Detraining. Guest Lecture at The Ohio State University. Columbus, Ohio, 3/13/86.

Carbohydrate Feeding During Prolonged Strenuous Exercise can Delay Fatigue. Texas Chapter of the American College of Sports Medicine. Dallas, Texas, November 1983.

Effects of Glucose Polymer Feeding on Fatiguability and the Metabolic Response to Prolonged Exercise. Ross Labs Symposia on Nutrient Utilization During Exercise. Tarpon Springs, Florida, 10/82.

Gastric Emptying Characteristics of Commercial Hydration Solutions. Ross Labs Symposia on Nutrient Utilization During Exercise. Tarpon Springs, Florida, 10/82.

The Specificity of Training for Improving Neuro-Muscular Power. The University of South Carolina Guest Lecturer Series. Columbia, South Carolina, 2/81.

Neuromuscular Adaptations to Isokinetic Training. Orthopedic Rehabilitation and Sports Medicine Conference. Cybex. Washington, D.C., 4/80.

Neuromuscular Adaptations to Isokinetic Training. Orthopedic Rehabilitation and Sports Medicine Conference. Cybex. Las Vegas, Nevada, 3/80.

Basics of Muscle Fiber Types and Their Importance to Human Performance. Orthopedic Rehabilitation and Sports Medicine Conference. Cybex. Scottsdale, Arizona, 3/79.

Local

In Service Workshop for Coaches: Training and Nutrition for High School Athletes. Drippings Springs ISD, Texas. 1/17/05.

Lecture for Dean's Distinguished Faculty Award. College of Education. The University of Texas at Austin. 2/9/02.

Sport Science and Nutrition for Children. Grand Rounds Lecture. Brackenridge Hospital. Austin Texas. 2/19/01

Diet and Exercise. Invited Lecture for Department of Health and Kinesiology. Texas A&M University, College Station, Texas. 2/2/01.

Interaction of Fat and Carbohydrate Metabolism During Exercise. Invited Lecture. Dept. of Health and Kinesiology. Texas A&M University. 3/3/00.

Physiology of Human Endurance. McCraw Lecture Series. Dept. of Kinesiology and Health Education. The University of Texas at Austin. 2/25/00.

Exercise and the Cardiovascular System. American Heart Association Conference on Women's Health. Austin, TX., 2/1/00.

Fat Metabolism During Exercise. Invited Lecture for Department of Health and Kinesiology. Texas A&M University, College Station, Texas. 2/8/96.

Carbohydrates and Athletic Performance. Fourth Annual Sports Performance Symposium. Southwest Texas State University. San Marcos, Texas. 4/21/95.

What Works? Enhancing Your Performance. 1994 Motorola Marathon Fitness Symposium. Austin, Texas. 3/5/94.

Carbohydrates and Exercise. Austin Chapter of the American Dietetic Association. Austin, Texas. 9/21/91.

The High-tech Components of Swim Training. The First Annual Longhorn Swimming Clinic. Austin, Texas, 4/5/90.

Carbohydrate Feeding and Performance. REI Clinic. Austin, Texas, 3/1/90.

The Physiological Adaptations to Running. Seton Hospital School of Good Health. Austin, Texas, 2/25/89.

Exercise and Cardiac Rehabilitation. Presentation to the Mended Heart Association of Austin. Austin, Texas, 11/84.

Cardiovascular Research. American Heart Association, Texas Chapter. Presentation to Hays County Board of Directors. San Marcos, Texas, 4/84.

Basic Biomedical Research. American Heart Association, Texas Chapter. Presentation to Brown County Board of Directors. Brownwood, Texas, 3/84.

Benefits of Exercise in Patients with Coronary Artery Disease. Austin Program of Internal Medical Education. Austin, Texas, 11/83.

Exercise Physiology and It's Implications. Fitness for Life Seminar. Austin, Texas, 7/83.

Cardiovascular Fitness Evaluation. Afternoon workshop presented to Austin Police Department. Austin, Texas, 6/83.

SERVICES FOR PROFESSIONAL ORGANIZATIONS

American College of Sports Medicine

- a. Past President of Texas Chapter, 1986-87
- b. Ambassador, 1988-1990
- c. Abstract reviewer
- d. Chaired scientific session for the past twelve years
- e. Member of the Continuing Education Committee, 1986-88
- f. Position statement committee for "Exercise and Fluid Replacement", 1994-95

The American Physiological Society

- a. Environmental and Exercise Physiology Steering Committee Member, 1997-2000

The National Academies of Sciences

- a. Food and Nutrition Board : Committee on Optimization of Nutrient Composition of Military Rations.

National Institutes of Health

- a. Office of Dietary Supplements Research. Member of organizing committee for conference on "Dietary Supplements for Physically Active Lifestyles".

National Institutes of Aging

- a. Ad-hoc grant reviewer, 1984

National Aeronautic and Space Administration

- a. Member of a working group for the Extended Duration Orbitor, 1988-90
- b. Chairman, Cardiovascular Working Group, NASA Exercise Countermeasures Project Task Force. 1989-90
- c. Member of Discipline Implementation Team/Exercise Countermeasures Project. 1990.

United States Olympic Committee

- a. Member of the scientific advisory committee and research committee, 1986-1988
- b. Consultant to the United States Swimming Federation 1983-1995
- c. Consultant to the United States Cycling Federation, 1984-1988

New Zealand Olympic Committee

- a. Member of Sports Science/Medicine Advisory Board

International Olympic Committee

- a. Committee for Biological Science; 3rd World Congress on Sports Science; 1995
- b. Keynote Lecturer; 5th World Congress on Sports Science; 1999
- c. North American Delegate. Sports Nutrition Working Group. International Olympic Committee

The Quaker Oats Company

- a. Member of the Gatorade Sports Science Institute 1987-now

World Congress on Sports Nutrition

- a. Member of International Assessment Committee, 1989

The Lance Armstrong Foundation